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Claims

1.   A system for driving a compressor, comprising
      an induction motor (2) for driving the compressor
5   (3a), said induction motor including a squirrel cage
rotor, and
      a controller (1) for controlling the induction
motor, said controller comprising
      a memory (47) for storing drive patterns for driving
10   the induction motor,
      a first frequency generation means (43) for
generating a field frequency based on a field command
and/or
      a second frequency generation means (44) for
15   generating a voltage frequency based on a voltage
command,
      wherein a drive pattern is extracted from the memory
based on the generated frequency or frequencies.

20   2.   The system according to claim 1, wherein the
controller comprises a processing means (42) for
generating the field command and/or the voltage command
based on an input request.

25   3.   The system according to claim 1, wherein the
controller is adapted to distinguish between a steady
state and a transient state of the induction motor.

4.   The system according to claim 3, wherein the
30   processing means (42) is adapted to generate the field
command and/or the voltage command depending on the state
of the induction motor.

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5.   The system according to claim 4, wherein the field command and/or voltage command is generated based on look-up tables.

5 6.   The system according to claim 4, wherein the field command and/or voltage command is generated based on a model based control.

7.   A system for driving a compressor, comprising
10   an induction motor (2) for driving for driving the compressor (3a), said induction motor including a squirrel cage rotor, and
          a controller (1) for controlling the induction motor, wherein the controller is adapted to distinguish
15 between a steady state and a transient state of the induction motor.

8.   The system according to claim 7, wherein the controller is adapted to control the induction motor
20 depending on the state of the induction motor.

9.   The system according to claim 8, wherein the controller generates a field command and/or a voltage command dependent on the state of the induction motor.
25
10.   The system according to claim 9, wherein the field command and/or voltage command is generated based on look-up tables.

30 11.   The system according to claim 9, wherein the field command and/or voltage command is generated based on a model based control.

12.   The system according to claim 7, wherein the
35 controller comprises

a memory (47) for storing drive patterns for the
induction motor,
        a first frequency generation means (43) for
generating a field frequency based on a field command
5   and/or
        a second frequency generation means (44) for
generating a voltage frequency based on a voltage
command,
        wherein a drive pattern is extracted from the memory
10   based on the generated frequency or frequencies.

13.   The system according to claim 12, wherein the
controller comprises a processing means (42) for
generating the field command and/or the voltage command
15   based on an input request.

14.   The system according to claim 1 or 12, wherein the
first and/or the second frequency generation means (43,
44) is a voltage controlled oscillator.
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15.   The system according to claim 1 or 12, further
comprising a counter (45, 46) receiving the frequency
output of the frequency generation means (43, 44),
        wherein the counter is adapted to count a value
25   based on the frequency of the frequency generation means,
and
        the frequency is used as an address for accessing
the memory (47).

30 16.   The system according to claim 1 or 12, wherein the
first frequency generation means (43) for generating the
field frequency and the second frequency generation means
(44) for generating a voltage frequency is used, wherein

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the memory (47) is accessed by using a first address
and a second address, and the system further comprises a
first counter (45) and a second counter (46), wherein

the first counter is adapted to count a value based
5   on the frequency of the first frequency generation means,
and the second counter is adapted to count a value based
on the frequency of the second frequency generation
means, wherein

the count value of the first frequency generation
10   means is used as the first address, and the count value
of the second frequency generation means is used a second
address.

17.   The system according to claim 16, wherein one of the
15   first and second addresses is a column address, and the
other address of the first and second addresses is a line
address.

18.   The system according to any of the claims 1 to 17,
20   wherein the compressor (3a) is a part of a turbocharger
(3).

19.   The system according to any of the claims 1 to 17,
wherein the compressor is an electrically driven
25   compressor.

20.   The system according to any of the claims 1 to 17,
wherein the compressor is part of an electrically
assisted turbocharger.

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